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United States Department of Agriculture

# Update on Water Quality



Progress Update #11

October/November 1991

## Swader is New WGWO Executive Secretary

Dr. Fred N. Swader, National Program Leader for Water Resources for the Extension Service, was named Executive Secretary for the Working Group on Water Quality in October.

Recently returned from a detail as a Visiting Water Quality Specialist with the University of Hawaii Cooperative Extension program, Swader began his Extension career as a soils specialist

for Cornell (University) Cooperative Extension in New York.

Dr. C.R. Amerman, who served as Executive Secretary since November 1989, returned to the National Program Staff of the Agricultural Research Service October 15.

Swader's office is 324-A, telephone (202) 720-4751, FAX (202) 690-2842, and Email: fswader@csusda.gov.

## USDA Takes It's Water Quality Initiative to Central and Eastern Europe

In late September, program managers and scientists from the U.S. Department of Agriculture's (USDA's) Agricultural Research Service, Cooperative State Research Service, (CSRS), Extension Service (ES), and Soil Conservation Service (SCS), the U.S. Environmental Protection Agency, the U.S. Geological Survey, universities, and industry joined colleagues in Central and Eastern Europe (CEE) at a workshop on agriculture related water quality needs of that area. The meeting was held in Poznan, Poland, under the leadership of Dr. Jerry Walker of USDA's Office of International Cooperation and Development. Representation from CEE countries included delegations from Bulgaria, Czechoslovakia, Hungary, Poland, Rumania, and Yugoslavia.

Workshop participants exchanged program technology/information and discussed regional water quality problems relating to, or affecting, agriculture. Several areas of possible technical assistance were identified including demonstration projects similar to the ongoing efforts of SCS and ES under the USDA Water Quality Initiative. These opportunities relate to both agricultural point and nonpoint source concerns identified by the CEE delegations. A list of opportunities for technical exchange was drafted for further consideration by USDA and the U.S. Agency for International Development. Contact Peter Patterson, telephone (202) 720-1867, FAX (202) 720-0630, for further information.

## Nitrate Occurrence In U.S. Waters

USDA's Working Group on Water Quality recently issued a reference summary entitled "Nitrate Occurrence In U.S. Waters." The report includes data from a wide array of surveys, reports, and studies by federal, state and private sources. Six USDA agencies, EPA, the U.S. Geological Survey, the Tennessee Valley Authority, the National Oceanic and Atmospheric Administration, and the Leopold Center for Sustainable Agriculture at Iowa State University assisted John Fedtkiw, Associate Director, USDA Office of Budget and Program Analysis, in preparation of the 35-page report.

The summary provides a broad perspective on the proportions of the problem of ground water, surface water, and estuary contamination associated with nitrate from agricultural sources. It is part of the USDA's effort for helping farmers and rural residents understand water quality problems, where they occur, and their dimensions. The USDA is working with other federal agencies and the states to help farmers operate in a way that minimizes or prevents pollution from agricultural sources.

Copies were distributed to various federal and state agencies, as well as organizations in the private sector. For additional information, contact John Fedtkiw, OBPA, at (202) 720-7063.

## Progress Reporting for HUA's and Demonstration Projects

By January 1992, the Extension Service and the Soil Conservation Service plan to prepare a comprehensive report on fiscal year 1991 progress in all 90 Nonpoint Source Hydrologic Unit Areas and Demonstration Projects. The report will include information on:

- Reduction in use or application of nutrients, pesticides, animal waste, sediment, and salt and toxic elements;

- Load reduction below the root zone or beyond the edge of fields;
- Monitored changes in the physical, chemical, and biological conditions of the water resource;
- Type and extent of water quality education and technical assistance provided; and
- Economic effects and producer acceptance of practices recommended.

## Fifth Year Groundwater Project

ARS scientists in Beltsville, Md., are in their fifth year of building one of the most complete data sets in the country on the movement of agricultural chemicals. Researchers at the ARS Pesticide Degradation Laboratory are measuring just about everything involved in the movement of water carrying atrazine, alachlor and cyanazine herbicides across and under cornfields.

The rain that falls on the fields is measured. The water evaporating from the fields is accounted for. The soil is sampled at 4-inch increments, down to 20 inches, to see how far the chemicals are moving down with the water. The groundwater is sampled from 128 wells drilled to depths ranging from 5 to 36 feet.

And the water that flows off the field is channeled through stainless steel flumes where ultrasonic sensors measure water levels in the flumes. Flowmeters connected to the ultrasonic sensors electronically convert the readings into flow rates and volumes. The meters also trigger

automatic water sampling for every 75 or 100 gallons of flow. The samples are analyzed for herbicide content.

With both no-till and conventional till, pesticides aren't reaching the deepest wells, where groundwater might be used for drinking water. Even when chemicals enter the shallower wells, they are usually well below EPA health advisory levels for drinking water. When levels approach or exceed those levels, they drop back within two or three days as the aquifer dilutes them.

Although the measurement of surface runoff only began last year, preliminary observations have confirmed that no-till can cut surface runoff and accompanying pollution by at least half. The data from this research should help create computer models that can account for regional differences and predict pollution potential nationwide.

Contact Don Comis, ARS, USDA  
301-344-2773 for additional information.

## PAC Will Assist in New ACP Practices

Agencies represented on the Policy Advisory Committee of the Working Group on Water Quality pledged cooperation and coordination with the Agricultural Stabilization and Conservation Service as it introduces four new water quality cost sharing practices under the Agricultural Conservation Program.

These new practices are:

- Integrated Crop Management (SP53); which demonstrates the use of crop management measures that encourage efficient use of pesticides and nutrients and demonstrate ecological benefits while maintaining farm income.
- Agricultural Waste Control Facilities (WP4); which can reduce the existing water, land, or air pollution by agricultural wastes. The modified practice is applicable to areas of farmland where agricultural wastes from the farm constitute a significant pollution hazard. A new component was added for composting. This component will assist in addressing the problem of disposal of dead birds.

- Pesticide Containment Facilities (SP55); which are sealed sloping concrete (or equivalent) pads that reduce the potential for contamination of soil, water, and air associated with the mixing, storing, and handling of pesticides. Spillage or runoff associated with the spray operation drains into a shallow sump or above-ground storage tank for proper disposal according to the pesticide label.
- Constructed Wetland Systems for agricultural waste water treatment (WP6); which uses constructed wetlands for treating agricultural waste water and is based upon using specifically characteristics, such as wetland hydrology and vegetation.

The Soil Conservation Service is providing technical assistance and will issue technical standards and specifications for these practices. For more information contact Jim McMullen, ASCS-USDA, telephone 202/720-6221.



Harry C. Mussman  
Chairman, USDA Working Group on Water Quality





